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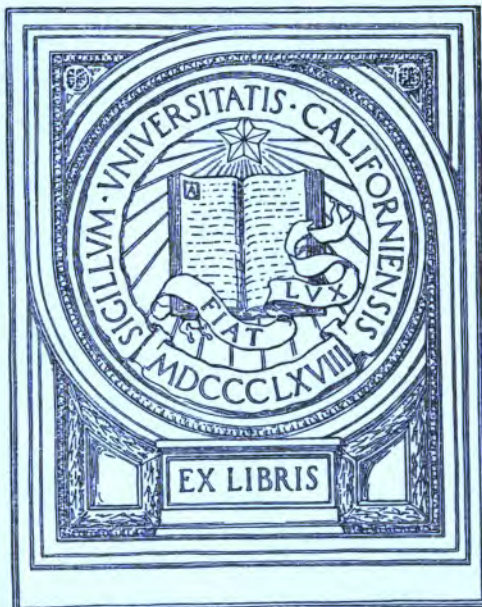
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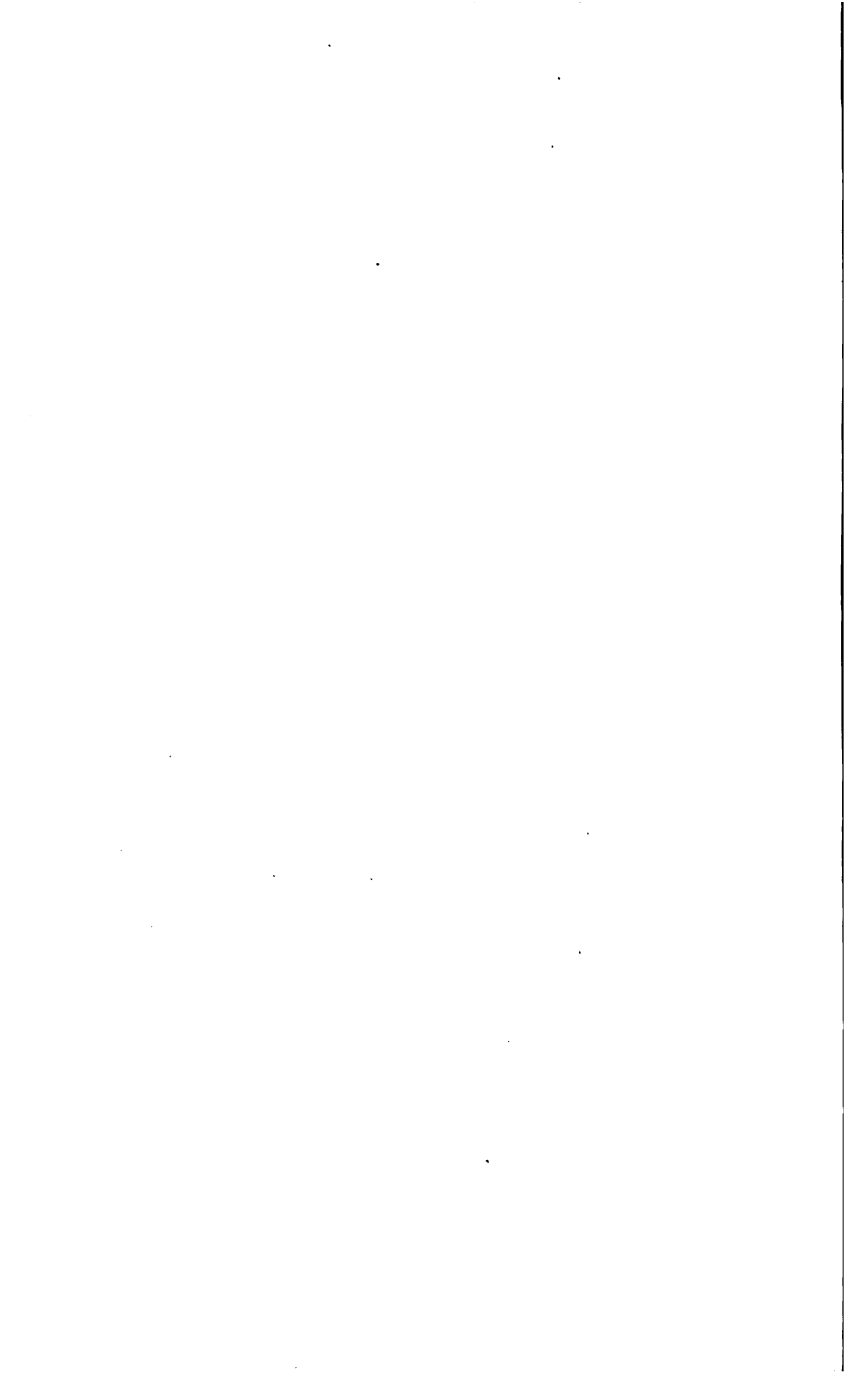


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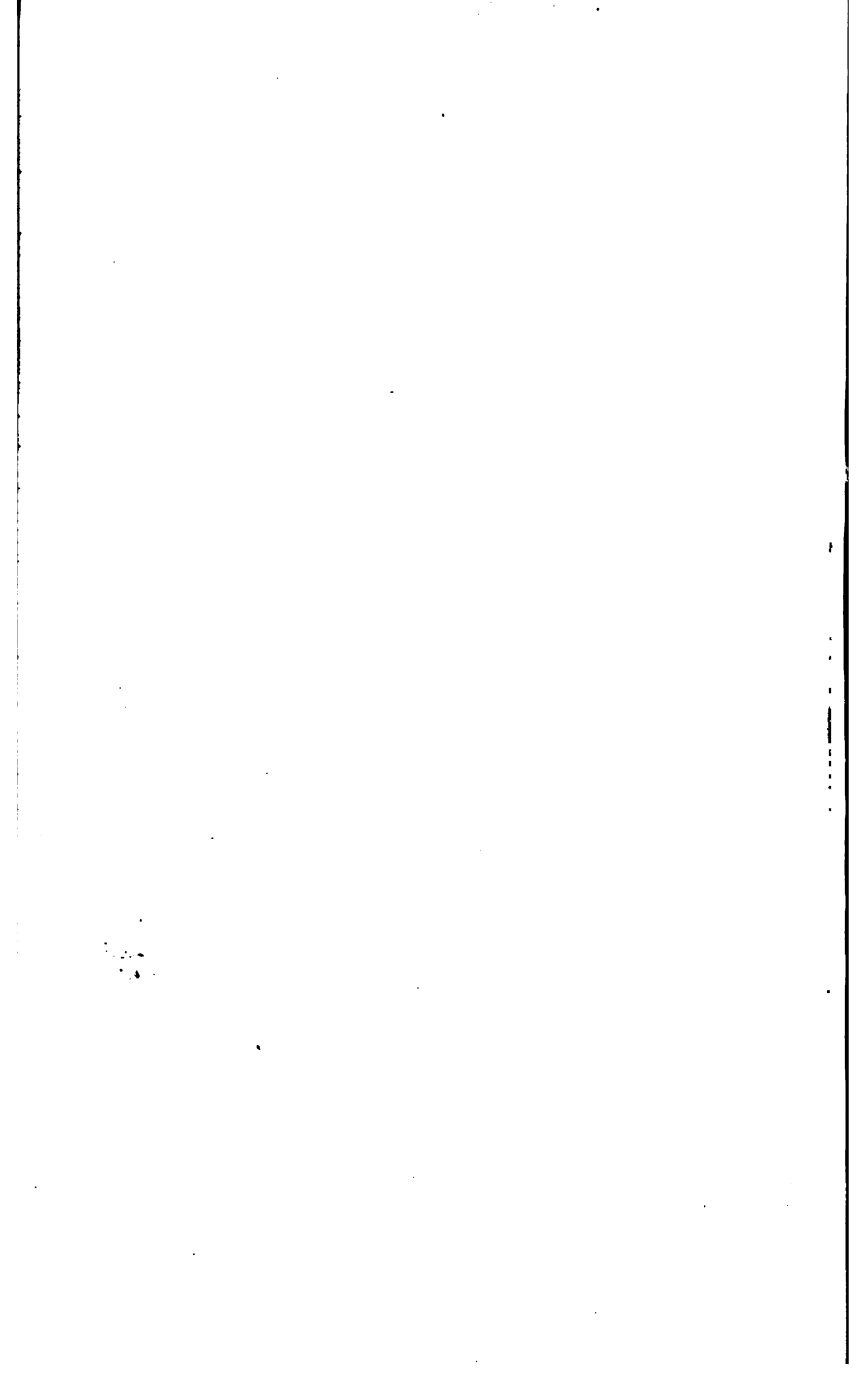














*"Falling out of bed."*

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The Two Oldest

# TREES

One Dead

One Living

*as told by*

RUFUS JANVIER BRISCOE

RIVERSIDE, CALIFORNIA

1914

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To my wife  
SARAH LOCKWOOD BRISCOE  
my companion on the deserts  
and in the forests.



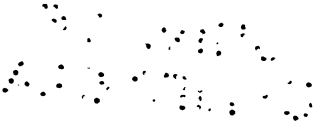
## The Two Oldest Trees

**W**HEN one is dealing with a subject whose activities date back to a period so remote that time is measured by hundreds of thousands of years, as we count time, one must have definite proof of his statements, else he is pronounced a guesser, or even worse, one of unsound mind.

The Jurassic period, the geologists tell us, was about one million five hundred thousand years ago, and it is of that period I seek to tell, so far as it relates by comparison to our present tree life and the climatic conditions as compared to our time and days.

The Jura Mountains of Europe, northwest of Switzerland, are composed of rocks of that epoch; hence the name as applied by eminent scholars to that period (the Oolite or Jurassic).





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The rocks of that age are not exposed except rarely in the United States of America.

In Northern Arizona they are clearly recognized, but not to a great extent.

In Apache County you will find these rocks and in them you will find the subject of this story, and should you go there you will find evidence of the correctness of my statements and undisputed proof of what some may call "the dreams of a lumberman."

There you will find "The Petrified Trees" (the agatized trees) so radiant in coloring that one is prone to believe he has found the workshop of the Great Jeweler whose stock in trade is agate, amethyst, chalcedony and jasper of every known color; the fragments, His chips, the unbroken sections of trunks of trees, His source of supply.

These ancient stone trees, broken in cross sections, from one to fourteen feet



*"Dewey cannon" mounted on the mesa.*

## THE TWO OLDEST TREES

in length and in diameter up to sixty inches, are again under the influence of Arizona's blue sky, her unmatched sunlight, and her never to be forgotten moonlight. They are falling out of bed, as it were, and you meet them as they lie upon the floor or in pits at a lower level than their long used resting place, which had been previously eroded for their reception by the God who gave them their birth away back before the Rocky Mountain were born, and when what we now call Arizona and California was a level, swampy country, like the Gulf States of the present day, Louisiana, Mississippi and Florida.

When a lad of but nine years of age, in the year 1855, I first heard of "the petrified trees" of the Little Colorado River of the far West. I heard the tale from the lips of Captain Whipple (afterwards General Whipple) who was killed at Chancellorsville, Va., during the Civil

War. He was a Lieutenant of the United States Army; had recently returned from commanding and guiding an expedition of exploration to and among the Moki and Navajo Indians and in and through those then little known regions of the territory lying between the Rocky Mountains and the high Sierras or Coast Range. He told of trees of stone, of their beautiful color and how hard the stone was, and of arrowheads being made from it, and of the ugly and painful wounds which they inflicted, even causing death in many cases. This much I well remember: his narrative made a deep impression on me. He also told of the hardships in passing through so desolate a country; in fact, he told enough to thoroughly arouse in me as a child a desire to go some day and see for myself this Wonderland.

Later in life I sought out other reports of this country and read them

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closely and carefully, especially reports of Lieut. Powell. It was he who passed down the main Colorado River and through the Grand Canyon. He also examined the surrounding country and in his reports glowingly described the "petrifications" of not only the Little Colorado River but those of a portion of the Painted Desert.

The agatized "petrified" trees were first discovered and reported to the Government by Lieut. Whipple in 1853.

Still later when in 1896 the time came that I could cross to the Pacific, I chose the Santa Fe route as it would bring me practically through the agatized regions. I stopped at Holbrook to visit a portion of the exposed trees; the river being high I could not cross it and see the wonders on the South side of the river, but secured specimens which I carried back as proofs of these pre-historic wonders.



*General view among exposed fossil trees.*

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When Tiffany & Co. of New York City exhibited at the World's Fair those matchless gems, those polished slabs or sections of the trees, the world awoke to the undreamed of beauty they possessed, and from that time on thousands annually visit those regions for investigation and admiration.

In October, 1913, I went to Adamana having in mind three important questions, and if possible to answer them correctly, I could then give an intelligent explanation to my friends and questioners.

The first thought was: Could I determine correctly the several distinct species of trees that had been fossilized. Second, the age of the trees when in life, based upon their respective diameters. Third, to determine, if possible, the annual average growth of the trees, and through the medium of this growth determine the climatic conditions upon the

earth when these trees were growing, by comparison with the same species of trees growing today.

I do not approve of the term "forest." I know it is misleading to many who expect to see what is not there. There are no trees or stumps that are standing in place, so far as I saw, in the agatized zone, and there is no reason to believe that many trees or, in fact, any of them, had their organic matter replaced with silica at or near the place where they grew. They evidently were scattered when they fell, drifting to a greater or less extent ere they sank to their final resting places.

The trees are found with their tops pointing to all degrees of the compass. This proves to me, and it should prove to you, that no cyclonic force threw them down.

Their fall must have been "as the tree inclined." All trees, with few exceptions,



## T H E   T W O   O L D E S T   T R E E S

lean or are out of the perpendicular, as they stand growing on the stump.

The sedimentary rock in which they are buried clearly tells that the surface had once been below the sea level and that at a time later than the tree life. Every indication points to this fact. So it is not conjecture to say that the trees were drowned by inflowing water, either salt or fresh, and when dead fell prone upon the water, or the then surface of the land, later drifting undoubtedly more or less and, as will all timber if afloat, finally sinking when water soaked (just as you know it does today in a newly formed mill pond), then to become incased in the sediment which eventually covers the fallen and sunken trees. Once incased in the sediment, provided there was silica in solution, the vegetable matter, which is organic, as it disappears the silica takes its place, and thus produces an exact replica of the tree in stone.



*Exposed tree over 100 feet in length. "The oldest tree."*

## THE TWO OLDEST TREES

The term "petrification" implies the changing of organic matter into stone; the fact is that the organic matter is replaced by silica in one or other of its various forms. Silica is the oxydized form of the non-metallic element silicon, the chief constituent of the earth's solid crust, and when not mixed with other oxides of other minerals or other coloring matter, is pure white.

Silica is found imbedded in limestones and other rocks; it has been made for the most part of Diatoms and Spicules of sponges and without any unusual degree of heat, and when under water may be dissolved in part, if the water be cold, and then consolidated without external aid by the saline ingredients of the water. By this means, also by parts of spiders, centipedes, worms, fishscales, bones of snakes, etc., etc., we are furnished with a non-metallic element which has made it possible for us of today to view an

exact duplicate of trees that were living millions of years ago.

It may be interesting to know that the Diatoms are most minute, that they are of vegetable origin, and so small are they that in one cubic inch of rock, in which they have been fossilized, it is estimated that there are forty-one thousand millions of these plants; also that silica constitutes about one-third of all the minerals contained in the earth except limestone.

Whence comes the wonderful coloring one sees in these ancient wonders? For here you will find the brilliant red of the hematite, the blue and green of copper, the yellow of iron and sulphur and colors that no name can describe, prepared from combinations known only to the God who paints the sunset and the rainbow.

When one looks at the walls from whence they come forth one will there see and find the source of the color matter used to give these remarkable results.

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This entire subject is one for a well equipped scientist and chemist rather than that of a practical lumberman who is liable to make errors when treading upon scientific ground. However, one fact is sure beyond question, namely, that when these trees were fossilized they were not standing as and where they grew, but long after they had fallen, and some even miles away from where the seed gave them birth.

The Jurassic or Oolite Group is remarkable for its fossil remains; fish, shells, reptiles and birds larger than any now known, also the great megalosaurus which were often thirty feet in length, also bats and innumerable insects; for its clays of varied colors, its ferruginous sandstone and its lime rocks, containing copper silicates, ferric salts and other minerals.

Should you refer to the pictorial (geological) views of its vegetation you will



*"The bridge tree."*

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find strange and unusual looking trees, fern and other plant life illustrated; but to my mind, I feel compelled to say imagination has played too large a part in the making of these drawings, for it is my belief, and the proof is in the seeing, that the forest growth when these trees were growing was similar in general respect to that we find in our Gulf States of today.

The cypress, the pine, the cedar, the high palmetto and the ground palmetto, and I think but am not sure, the oak and the magnolia are the prevailing trees of the agatized formations. The pine, the cypress and the cedar, also the oak and the magnolia, are my personal friends, and while they lie prone and glisten; in the bright sunlight, their hearts of stone tell unmistakably of their separate individuality.

The bark, the hollow heart, the punky timber, the spike knotted timber, the churn

butt of the cypress, as well as the sound and more perfect tree, can be seen. A lumberman usually describes a forest in the use of such terms, and finding such characteristics at hand makes me doubly sure of my position that these ancient trees were the predecessors of the twentieth century trees, without a doubt and with little, if any, change in their personnel.

There has been no change in their general characteristics in spite of the vast period of time which has elapsed since they grew. The forest contains mostly conifers, but in no case could I find a cone nor could I learn of any having been found. But I did bring away with me absolute proof that the replacement, or what is known as "petrification," took place after the tree had fallen and, in one case, broken in its fall. The illustration will show my contention more clearly than words.



## T H E   T W O   O L D E S T   T R E E S

When a human being can survey that part of Nature's operations which he feels competent to study, he can then assert himself in a confident manner, but should do so with much caution.

When these fossilized agatized trees were living they were doing as the living trees of today all do, namely, recording yearly their age, making a record of the rainfall, recording the storms of the year and thus telling, climatically speaking, what were the conditions on the earth at that time.

When I wish to find the age of a tree I first get the circumference, then the diameter, which I divide in half, then reduce that half of the diameter to inches, then secure, by accurately counting, the average number of yearly rings or growths of the tree to the inch; multiply this result by the number of inches in the half diameter and I have the age of the tree.



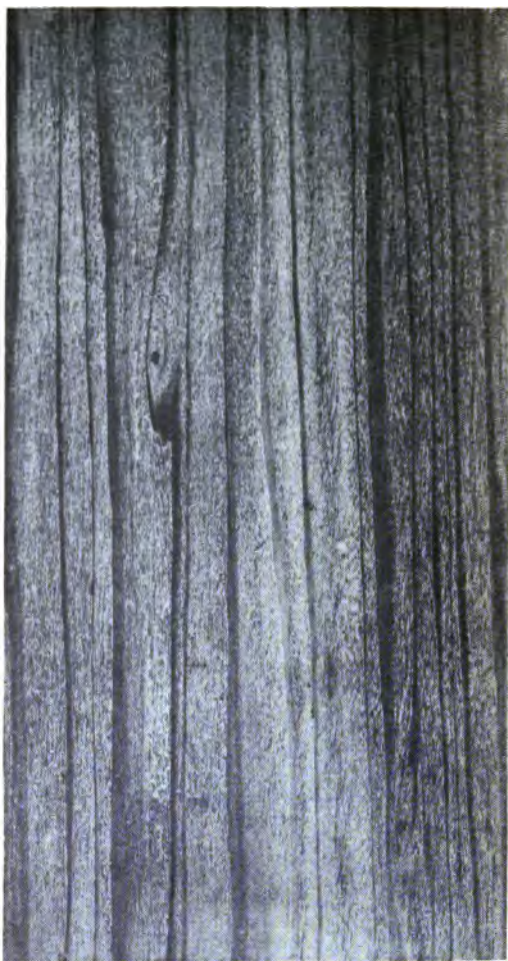
*Fossilized cypress showing annual rings or growth.*

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*Examples:* Take a tree thirty feet in circumference—it will be ten feet in diameter; the distance from the heart to the outside of the bark, or one-half the diameter, would be five feet or sixty inches. Supposing you have found the average number of rings to the inch to be twenty, then you have the age of the tree 1200 years.

When measuring a stump you can determine the exact number of rings as you can stop where the bark begins; if the tree is standing and you wish to make an exceptionally correct comparison, I would get the exact diameter of the tree by measuring the bark on both sides, and the result deducted from the outside circumference will be the diameter of the body of the tree. This can be easily done and without harm to the tree by using a small pointed steel properly ruled off. Most barks of trees are easily penetrated and without harm to the tree.

These trees, as stated before, I feel sure, are direct ancestors of the trees of today, and as to their age when alive it may interest you to know something definite. I have used great care and a strong magnifying glass in counting the yearly growth of these trees, and my examination shows that on an average one is safe in using eighteen rings, sixteen rings and twelve rings as the representation of an inch growth of the diameter of the cedar, the cypress and the pine trees. You will not go far astray when you come across a cedar log twelve inches in diameter near the butt if you declare that it was 108 years old. A cypress of the same diameter would be 96 years old, and a pine of the same diameter would be 72 years old. This is the result I have obtained by carefully counting polished sections of these different trees which I secured where they now lie exposed; the same rule applies to larger or smaller trees.



*Cypress growing in 1913 showing growth as it compares with the ancient tree life.*

The yearly growth shows by its width the dry year as well as the one when rain was abundant, and so closely do they compare with the growth of trees of the same species today, that I conclude that the geniality of the earth at that time was about as it is now, long before succeeding "Ages of Ice" covered portions of the earth's surface.

These trees grew in about the same location as to latitude, which was about 36 degrees North, as do the living trees of the same species today many miles to the east. They have been elevated during their Stone Age to a height of 5,700 feet above sea level, but during their life they, as their successors, grew and flourished at a low altitude.

I can offer no explanation or find any satisfying reason for the breaking of these trunks into cross sections, except that I am convinced from a close observation of the "bridge tree" that could we undermine

## T H E   T W O   O L D E S T   T R E E S

the undisturbed trunks we would find them intact. I think, however, their great weight (which is about 200 pounds to the square foot) is the real cause of the fracture, for unless they are properly and evenly supported on a true level some fracture is bound to take place when the erosion releases them.

Some trees have been made oval or flattened and we are told that the great weight of a solid mile of rock, which they say covered them at one time was the cause. This I do not believe plausible, for some trees are not in this shape—only a portion of them.

When the organic matter in the trees was being replaced with silica they could not have been so deeply covered, or had they been covered with so great a weight after they had been fossilized, they would not have been made oval or flattened, but shattered into innumerable fragments if disturbed at all.



*Fossilized cypress which shows clearly the fracture when the tree fell before its replacement with silica.*



## THE TWO OLDEST TREES

You cannot make an oval or a round piece of fossilized wood by pressure; it must have occurred in advance of the fossilization, and it is my opinion that the trees of oval form are largely of the family of palmetto, both tall and ground varieties. These have for their main structure a much softer or pulpy body. If not palmetto they were defective trees of other species which had weakened under ordinary pressure. In no other wood fossilization do I find these oval or flattened trees.

It was my experience in Michigan, during the early days of lumbering, that much down timber was met with and that in almost every case where the trees had been "hollow hearted" before falling it was flattened as it struck the ground, in other words made oval, appearing exactly as does the oval trunks of the stone trees.

The pine and cypress, are subject to such a condition as they reach maturity,

fully fifty per cent of their number become "hollow hearted."

The hardness of these stone trees is rated at No. 7, topaz is No. 8, corundum is No. 9 and the diamond is No. 10.

A visit to these relics of so long ago can be made with ease and comfort. You can have your train stop at Adamana, which is on the main line of the Santa Fe a few miles west of Gallup. The genial and gentlemanly custodian of the reservation (now Mr. Chester B. Campbell), will meet you in case you let him know of your intention to stop. You can be comfortably housed and fed at reasonable cost, close at hand. Provided there is no water in the Little Colorado there will be no hardship in making the trip to the exposed trees, a superficial observation of which can be made in one day. The cost is reasonable. However, I would advise that several days be given to these and the



*Sequoia Gigantea in Virgin forest, Kings River, California.*

many interesting objects to be seen in that vicinity.

During a visit to the Yosemite Valley during the year 1912, I found much pleasure in going about its confines, admiring and studying the native tree life, which is not only invigorating, but to a lover of trees a pleasure unobtainable anywhere else that I know of in America.

The sugar pine, the yellow or red pine, the white cedar and the great oak grow here to perfection. Their stately, upright bearing is imposing and pronounced beyond expectation. They are not extremely large, but their height and diameter command respect and attention.

The largest yellow pine that I know of in the Valley is standing west of the main roadway leading into the Valley, a little southward of Bridal Veil Falls and Sell's Camp, and measures about twelve feet in diameter. I estimate its age at fully 1600



*The largest yellow pine growing in the Yosemite Valley.*

ONE LIVING — ONE DEAD

years, its height about 200 feet. It is in perfect health.

Further up the Merced River, close to the bank on the north side, you will find a stately sugar pine, the tree that has been preserved through the changing, as it were, of the main current of the river. This tree is fully nine feet in diameter, it is more than 200 feet tall, and its age I put at about the same as the yellow pine just referred to. In this case an excellent opportunity for making the comparison as to its age can be obtained from a sister tree, the stump of which can be found about 200 feet further up the stream, on the same side of the river. This sister tree was cut down and thrown into the stream and used as a dam in order that the cutting of the bank might be stopped, and the tree first referred to saved.

A magnificent cedar growing in the village of Yosemite has been built around in the erection of a cottage, the massive

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trunk passing up through the roof. It has a diameter of about nine and one-half feet and an age of fully 1800 years.

The oak trees growing there are of the black oak family. They are numerous, some of very large size and of great age. They have furnished annually for centuries, acorns, which are gathered in their season, and used as an article of barter in exchange for the pinon nut, by the Indians of the valley with the tribes that live up on the higher mountains, and on the east side of the range.

It was my pleasure to meet and know Mr. Chris Jorgensen, the famous artist of Carmel, and while discussing with him the tree life of the valley, he told me of a Sequoia somewhere in Fresno County near the Kings River, which was much larger than the grand old "Grizzly" of the Mariposa Grove of Big Trees, or of any other known tree in California; also



*Yellow pine and cedars, Yosemite Valley.*



## T H E   T W O   O L D E S T   T R E E S

of his determination to go and find it and see for himself.

In the month of August, 1913, I started out to find that tree, going by the way of Visalia, Exeter, and finally bringing up at the little town of Sanger, Fresno County. I had decided to make the camp in the General Grant Grove of Big Trees my headquarters. While at Sanger making arrangements for transportation, by a singular coincidence I met the son of Thomas Hume of Muskegon, Michigan, who is the vice-president of the Hume Lumber Company. We had not talked long before we found much in common, both as to friends and former business associates; we were both from Michigan. Of course I asked him about the route I intended to take and sought of him advice such as I needed, mentioning the object of my travels. Imagine my surprise when he quietly remarked: "We own that tree; we call it the 'Boole Tree'

after one of our old employees of that name.”

He told me that the tree stood about five miles northeast of the village of Hume and at an elevation of about 7000 feet. He gave me the circumference and much other information concerning it.

During this conversation, which was held in an old wooden building called a garage, one of those infrequent but terrific storms of thunder, lightning, rain and wind was gathering up the mountain to the east of us. Later it broke with all its fury and all question of making a safe climb of the mountain was deemed improbable, a portion of the grade of the imperfect roads or trails having a percentage of fully thirty degrees, and in one case a length of over 600 feet. So the premeditated trip had to be abandoned for that time and well that it was so, for the main lines of the Southern Pacific and Santa Fe were put out of commission



*The noted sugar pine of the Merced River,  
Yosemite Valley.*

completely for the next thirty-six hours from the effects of the storm.

Failing in this effort I went to their flumes which bring down the lumber from their mills, and through the courtesy accorded me, secured a sample of the wood from a Sequoia tree which must have been at least twelve feet in diameter. This sample I used as my basis for estimating the age of this very large tree which I was told was 133 feet in circumference, 280 feet high as it stood; the top having been at some previous day broken off by a stroke of lightning. Had the tree been perfect its height must have been not less than 350 feet. My estimate of the annual growth of this tree, put conservatively, is not less than twenty-six annual rings for each inch of its growth, including its bark (the bark of the Sequoia is often as thick as eighteen inches and some say even thicker); thus indicating its age to be 6864 years. So I think I am correct in saying that this is *the*

## THE TWO OLDEST TREES

*oldest living tree.* It is of the family, *Sequoia Gigantea* and a much larger tree than the General Sherman near Ranger Camp, which is spoken of in the railroad guides as "the largest tree in the world."

It was a great disappointment not to visit the tree personally, but I have that pleasure in anticipation during the coming year.

I show the tree photographed and beg to submit two views. I became familiar with its location and feel competent to speak of it as I do.

— I beg to quote from the following letter:

HUME LUMBER COMPANY  
SANGER, FRESNO COUNTY, CALIFORNIA,

November 29, 1913.

Mr. R. J. Briscoe,  
Riverside, California.

Dear Sir:—

Many thanks for your postal of the 13th received some time ago, but I have been



*"Old Grizzly," undoubtedly one of the oldest trees in the world.*

## T H E   T W O   O L D E S T   T R E E S

away so much that I have neglected to reply to it.

In answer to your inquiry will now say that 133 feet is all right to be used as the circumference of the "Boole Tree."

With personal regard, I am,

Yours very truly,

GEORGE A. HUME.

The "Big Trees" of Australia are of the Eucalyptus family. Some have been measured that are as tall as four hundred feet, but their diameters and their age are not to be compared with the Gigantea Sequoia of California.

So much has been written and so much is known of the Big Trees of California that it seems out of place for me to attempt to bring out anything new on the subject; however, I cannot refrain from offering a few thoughts and ideas of my own and I trust that they may at least prove interesting.

There are three trees in California which are famous and well known. They

are visited annually by thousands of people. It has been my experience when in their presence, with others, to hear questions asked which could not be answered by the guides or other members of the party.

“Old Grizzly,” of the Mariposa grove near Wawona, is undoubtedly one of the oldest of living trees, and I am told that David Starr Jordan puts the tree’s age at 8000 years; it certainly looks it.

This monarch of the forest is 104 feet in circumference, which would give a diameter of thirty-four feet. Near this ancient tree is the “Fallen Monarch,” a tree of the same family, of great age and which, reliable authorities say, fell to its present position on the ground more than a thousand years ago. I think twice that time for I have proof in other trees that sustain me in this conclusion. I know of a tree that had fallen eighteen hundred years ago, that when cut into lumber, in





*The "General Sherman," the largest tree in the world, according to many statements.*

Humboldt County, was sound and free from rot indications; this tree was two thousand, two hundred years old. A tree had grown directly in front of the stump of the fallen one which, when cut down, showed its age to be over eighteen hundred years. From the rings of this "Fallen Monarch" you can read the story of "Old Grizzly," and the average annual growths to make an inch I estimate at thirty-one. On this basis the age of "Old Grizzly" would be 6324 years.

"The General Sherman," of the Sequoia Reservation, known as "the largest tree in the world," has about the same circumference as "Old Grizzly," and consequently the same diameter, but I think it is younger by at least a thousand years. Its location would indicate a better water supply and a deeper soil.

In the Santa Cruz grove, near Santa Cruz, is "The Giant," a grand old tree. It has a present height of 306 feet; its top

## THE TWO OLDEST TREES

was broken off by lightning striking it. The length of the top was 75 feet, making a total height for the perfect tree of 381 feet. So many of these aged specimens of vegetation have their crowns broken off by having been struck by lightning, there seems to be good evidence of the truth of the old saying: "Stand long enough in one place and you will be struck by lightning." "The Giant" is sixty-six feet in circumference with a diameter of twenty-two feet. The age of this tree is stated in printed matter as 5000 years. I have taken much pains in computing its age and in making comparisons by consulting stumps in the immediate vicinity, and my conclusion is that the age of the tree is 3600 years. This is not a *Sequoia Gigantea*, but a cousin of that family. Its cone is much smaller and slightly different in form. It is known as the *Sequoia Semper Virens*.

> It was not long ago that I spent a day among the Big Trees grouped near Santa



*"The oldest living tree." (Note carefully men clinging to bark near base of tree.)*

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Cruz, and you can imagine the pleasure afforded me on finding that a tree of moderate diameter, not far from the "McKinley and Roosevelt" trees, had fallen and that in order to keep the paths open, a section had been cut out of the trunk. Here was an opportunity of reading correctly from the storehouse of tree knowledge.

When among these aged standing trees you will notice circular depressions or bowls. The predecessors of the living trees once stood above these open circles, ages ago, before the tree and its base were consumed by repeated fires.

Plainly and distinctly I found recorded there that in the latter part of the Fifteenth century (1450 to 1500), there had been a period of unusual aridity which had lasted for fully fifty years, and to such an extent, caused by the reduced rainfall, that the tree barely survived. Immediately following this period was

the return to normal conditions, clearly indicating that in the following ten to twenty years the tree grew as much or more than it had grown in the previous half century. This fact was very interesting to me, because it clearly gave the reason for the abandonment of certain sections of the country, about that time, by the inhabitants, who were cliff dwellers; also those who had homes on the mesa and at other locations which they had long occupied up to that period. The drouth of this period was widespread as the historian will tell you, also the larger trees in the higher elevations on the mountainside, the Sequoia Gigantea, repeat and tell the same story; in fact, the world's history has been and can be re-read back to the building of the pyramids, from the records in the larger and older trees, as correctly, or even more so than by the historians.

Wonderful as it may seem, the famine



*Showing the annual growth of the Sequoia Gigantea.*

in the days of Elijah is clearly noted (about 900 years before Christ), also the distressing time caused by aridity in the seventh, eighth and thirteenth centuries, A. D. On these points the tree and the historian agree most completely.

It is a matter of history that when periods of aridity occur, poverty and distress are prevalent; when rain is abundant the opposite condition is noted. The *Sequoia Gigantea* now growing are found between the thirtieth and fortieth parallels of north latitude. The records of the historian of events taking place in this same division of the earth's surface, from California to Asia, agree so perfectly with the records of these trees that one is dumb with amazement.

Not far from "The Giant" is a tree not quite so large in circumference, but which is badly scarred by fire. Inquiry was made as to the time the fire probably occurred. The answer was that Indians

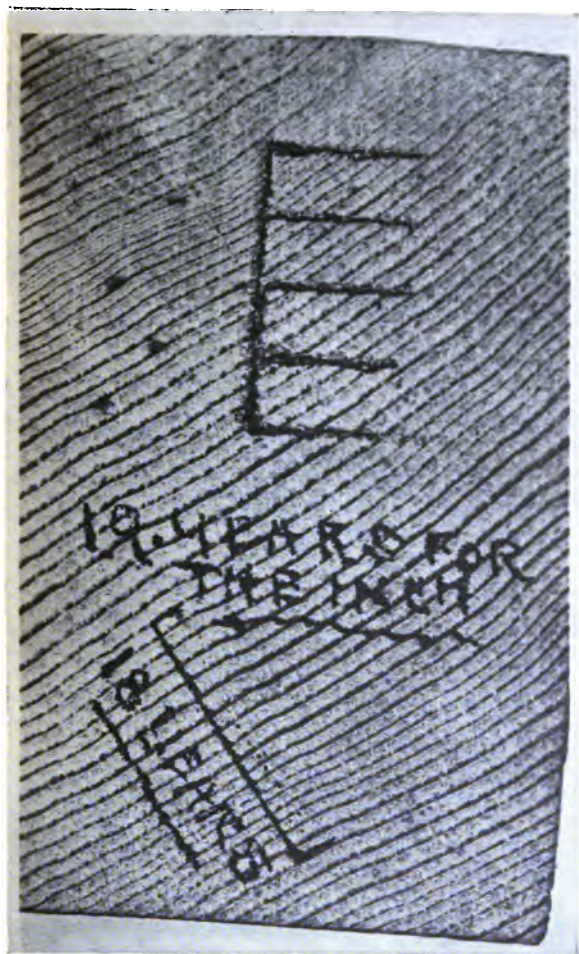


## T H E   T W O   O L D E S T   T R E E S

had probably set the woods on fire or that it had occurred from other causes, such as lightning or friction, but no definite answer was given.

My experience as a lumberman furnished me with a method of determining this important fact which I will explain. I ascertained the diameter of the suckers or young trees that were growing within this fire zone, and by determining accurately the annual growth of some of the same diameters which I found in a pile of wood not far away, I could say with conviction that the fire which all but killed the Sherman tree occurred about ninety years ago. I speak of this to show how much can be learned by experienced observation and proper application of this to the subject in hand.

It has been my intention to answer questions that I have often heard asked by persons when in the presence of these national wonders. In most cases no decided



*Showing the annual growth of a Douglas fir.*

## T H E   T W O   O L D E S T   T R E E S

or lucid reply had been given; frequently such answers have been so ridiculous as to disturb the occasion. I have tried to supply in advance the information, and thus add interest to the visit by telling of the circumstances surrounding these great wonders, as to their life, their death and their family characteristics.

At no other place that we know of, except in Arizona, can you find the agatized trees.

Only in California can be found the mature living *Gigantea Sequoia*. These few groves of living trees were spared to us and to this age, by the fact that the glaciers of the last ice age could not, and did not sweep away their immediate ancestors.

At certain points on the west side of the high Sierra range of mountains a few of these trees were afforded protection by being sheltered behind the range. This was not the case at all points, for between the several groves the glacier's tongue



*The grand old tree, Santa Cruz grove—"The Giant."*

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broke through the canyons and lower divides of the high range; so, that where you find evidence of the action of the extinct ice (there are, however, to be seen at this day the dying remnants of the ice age in the districts I refer to), you find no trace of the Sequoia.

It may be interesting to know that at one time this noble tree grew world-wide on the earth's surface, grouped in extensive forests. Especially are we told of this fact by their fossil remains which are in much evidence from Greenland to New Jersey on this continent.

Some one has said, and I think it is well said and advise you to try it: "Stand close to the base of one of these great trees, then look upward at the ascending trunk, and you will get what is seldom seen—a view of immortality."

In conclusion let me beg of you that you consult the best of authorities for confirmation and further information re-

THE  
GROVE OF  
GIGANTIC TREES



*The "General Sherman," Santa Cruz grove.  
(Badly burned.)*

## THE TWO OLDEST TREES

garding what I have been telling, provided you doubt. As I have said before it will add interest to your visits, as it has to mine, and you will go back to your home wiser and better equipped to fight the battles of life which surround us all.



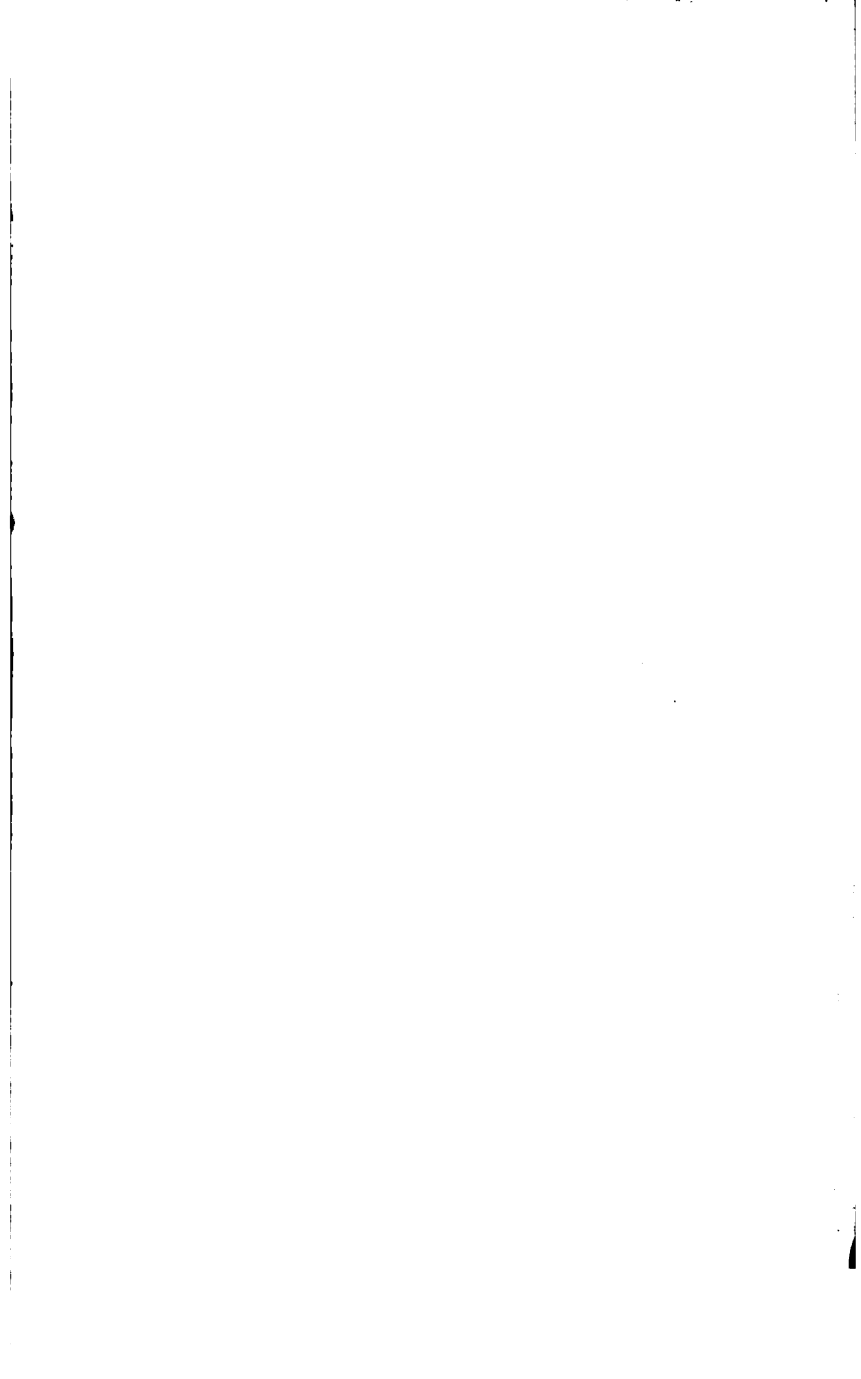
Base of the oldest and largest of trees.

*Pen. Sherman*



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